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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,573	12/12/2005	Theodore Letavic	US03 0162 US2	6633
65913	7590	10/31/2007	EXAMINER	
NXP, B.V.			KEBEDE, BROOK	
NXP INTELLECTUAL PROPERTY DEPARTMENT			ART UNIT	PAPER NUMBER
M/S41-SJ				2823
1109 MCKAY DRIVE				
SAN JOSE, CA 95131				
NOTIFICATION DATE		DELIVERY MODE		
10/31/2007		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/560,573	LETAVIC, THEODORE	
	Examiner Brook Kebede	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 26 July 2007.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-3 and 12 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-3 and 12 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “**an insulator layer between the SOI layer and the substrate layer,**” as recited in claim 1, line 7, and “**wherein the deep N implant layer formed between the source and the insulator layer,**” as recited in claim 2 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Specification*

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 1 recites the limitation “a Deep N implant layer formed between either the source or drain and the **insulator layer**” in lines 11-12. However, there is no support in the specification for “a Deep N implant layer formed between …the **insulator layer**” as originally filed.

Claim 2 recites the limitation “wherein the deep N implant layer formed between the **source and the insulator layer**,” in lines 1-2. However, the recited limitation has no support in the specification as originally filed.

*Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitation “a Deep N implant layer formed between either the source or drain and the **insulator layer**” in lines 11-12. However, there is no support in the specification for “a Deep N implant layer formed between …the **insulator layer**” as originally filed.

Claim 2 recites the limitation “**wherein the deep N implant layer formed between the source and the insulator layer,**” in lines 1-2. However, the recited limitation has no support in the specification as originally filed.

Therefore, the claim contains the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 2, 3 and 12 are also allowed as being dependent of the rejected independent base claim.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Krivokapic (US 6,339,244 B1).

Re claim 1, Krivokapic discloses a thin film Silicon on Insulator (SOI) device comprising a source (34), a gate (22), a drain (36), an SOI layer (18), and a substrate layer (12); an insulator layer (14) between the SOI layer and the substrate layer, wherein when the substrate layer (12) is maintained at a potential sufficiently lower than the potential of the source a parasitic MOS channel is formed between the source and drain (i.e., low concentration p- type doped substrate 12); and a Deep N implant layer (40) (i.e., n-type dopant 40 formed in the substrate 12, Figs. 4-6, invert the p-type dopant that prevent electric fields from the drain to

reach through the insulator to the source during the operation) formed between either the source or drain and the insulator layer to prevent the flow of current between the source and drain via the parasitic MOS channel when the device is in an off state (i.e., fully depleted channel during region of **18 OFF-STATE** of the MOS device) (see Figs. 1-11 and related text in Col. 2, line 43 – Col. 4, line 63).

Re claim 2, as applied to claim 1 above, Krivokapic discloses all the claimed limitations including wherein the Deep N implant layer is formed between the source and the insulator layer (see Figs. 1-11 and related text in Col. 2, line 43 – Col. 4, line 63).

Re claim 3, as applied to claim 1 above, Krivokapic discloses all the claimed limitations including wherein the Deep N implant layer is formed between the drain and the insulator layer (see Figs. 1-11 and related text in Col. 2, line 43 – Col. 4, line 63).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krivokapic (US 6,339,244 B1).

Re claim 12, as applied to claim 1 in Paragraph 6 above, Krivokapic discloses all the claimed limitations including maintaining the source potential greater than the substrate potential (i.e., it is standard PMOS transistor operation that PN junction is biased in a forward direction,

the threshold voltage is lowered, and the operation is accelerated when the substrate potential is lower than the source potential).

Furthermore, the claimed voltage can be routinely adjusted by routine optimization in order to efficiently operate the device.

One of ordinary skill in the art would have been motivated to optimize the claimed voltage range by using routine experimentation in order to efficiently operate the device.

Therefore, it would have been to one having ordinary skill in the art at the time of the invention is made to optimize the claimed voltage range, since it has been held where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Furthermore, the specification contains no disclosure of either the critical nature of the claimed voltage value or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. See *In re Woodruff*, 919, f.2d 1575, 1578, 16 USPQ2d, 1936 (Fed. Cir. 1990).

#### *Response to Arguments*

9. Applicant's arguments filed on July 26, 2007 have been fully considered but they are not persuasive.

Applicant argues that “Krivokapic reference do not correspond to the claimed limitations directed to the deep N implant layer being between either the source of drain and the parasitic MOS channel...”

In response to Applicant’s argument, it is respectfully submitted that Krivokapic, as Shown Figs. 9-11, disclose the Krivokapic discloses the deep N implant being either the source and drain of the parasitic MOS channel.

As shown in Figs. 4-6, the deep N- plant diffusion region is formed in SOI layer 18 (see Fig. 5) and the substrate 12. Therefore, the deep N implant layer is being between the source/drain and the insulator layer.

Therefore, the rejection of claim under 35 U.S.C. 102(b) is deemed proper. In addition, the *prima facie* case of obviousness has been met and the rejection under 35 U.S.C. § 103 is deemed proper.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

*Correspondence*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brook Kebede/  
Primary Examiner, Art Unit 2823

/BK/  
October 24, 2007